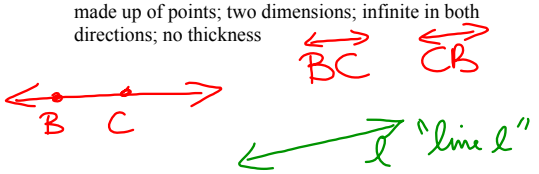
Chapter 1 Essentials of Geometry

## 1-1 Identify Points, Lines, and Planes

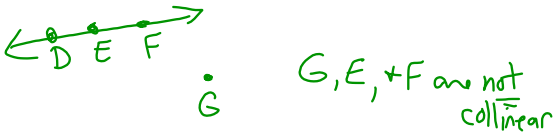
point location; no dimension; no thickness

• A

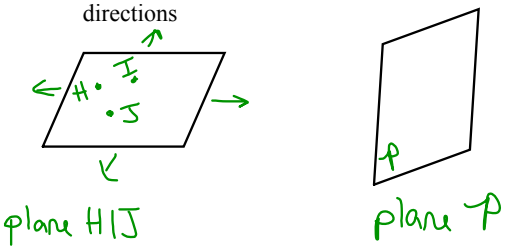
line made up of points; two dimensions; infinite in both directions; no thickness




collinear points--points on the same line




plane flat surface; two dimensions; infinite in all directions

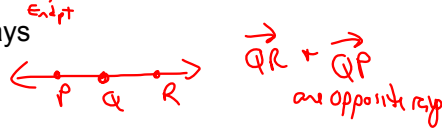



coplanar points-- points on the same plane

line segment--has 2 endpoints


ray--one endpoint


opposite rays



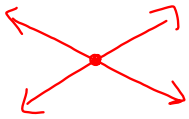

intersection--set of points that the figures have in common

(2.4)

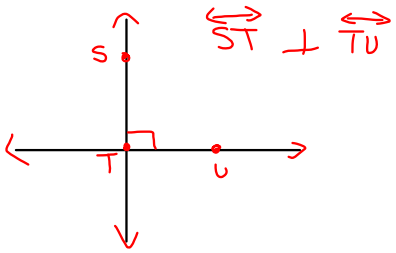
Postulate 5--through any 2 points, there exists exactly one line

Postulate 6--A line contains at least 2 points

Postulate 7--If 2 lines intersect, then their intersection is exactly one point

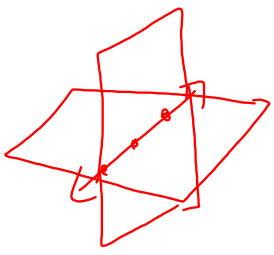


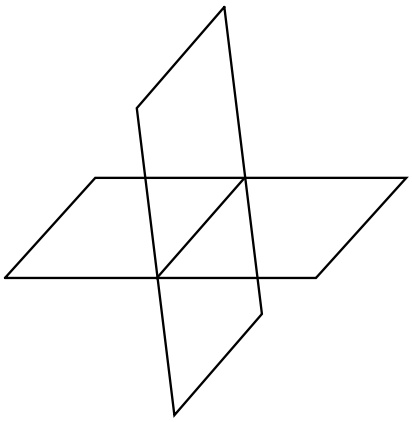
perpendicular lines--2 lines that intersect to form a right angle




Postulate 8--Through any 3 noncollinear points there exists exactly one plane

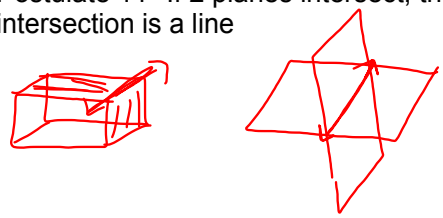
Postulate 9--A plane contains at least 3 noncollinear points



Postulate 10--If 2 points lie in a plane, then the line containing them lies in that plane

Postulate 11--If 2 planes intersect, then their intersection is a line



Space - set of all points

True or False

1. $C$ and $D$ are collinear.
2. $\overleftrightarrow{XB}$ lies in plane $\mathcal{K}$.
3. Points $A$, $C$, and $X$ are coplanar.
4. $\overleftrightarrow{AD}$ lies in plane $\mathcal{J}$.
5. $X$ and $Y$ are collinear.
6. Points $Y$, $D$, and $C$ are coplanar.